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A PROVISIONAL LIST OF THE UREDINEÆ OF BOURBON COUNTY, KANSAS.

By A. O. GARRETT, Salt Lake City, Utah.

Read (by title) before the Academy, at Topeka, January 1, 1903.

THE following list of rusts includes all species observed by the writer during seven years of residence in Bourbon county, all of which have been collected by him. I wish to thank Mr. Elam Bartholomew, of Rockport, Kan., and Prof. J. C. Arthur, of Purdue University, Lafayette, Ind., for the great assistance they have rendered in determination and citation, and for the many valuable suggestions received from them.

1. *Æcidium grindeliæ* Grif. (Bul. Torr. Bot. Club, vol. 29, p. 299, May, 1902.)
On leaves of *Grindelia squarrosa* (Pursh) Dunal, May 29, 1902. New to the state.
2. *Æcidium grossulariæ* Schum.
On leaves of *Ribes* sp., July 9, 1902.
3. *Æcidium jamesianum* Peck.
On leaves of *Asclepiodora viridis* (Walt.) A. Gr., May 29, August 6, 1902.
4. *Æcidium kellermani* De Toni.
On leaves, stems and pods of *Baptisia australis* (L.) R. Br., June 15, 1900.
On leaves, stems and pods of *Baptisia leucantha* T. & G., June 21, 1902.
5. *Æcidium peckii* De Toni. (I of *Puccinia peckii* [DeT.] Kellerman.)
On lower leaves of young plants of *Onagra biennis* (L.) Scop. (*Enothera biennis* L.), May 24, 1902.
On leaves of *Hartmannia speciosa* (Nutt.) Small (*Enothera speciosa* Nutt.), May 25, 1902.
6. *Æcidium pentstemonis* Schw. (I of *Puccinia andropogoni* Schw.)
On leaves of *Penstemon digitalis* (Sweet) Nutt., May 30, 1902.
7. *Æcidium solidaginis* Schw.
On leaves of *Solidago missouriensis* Nutt., June 15, 1901.
8. *Æcidium verbenicolum* E. & K. (I of *Puccinia vilfæ* A. G. H.)
On leaves of *Verbena angustifolia* Michx., June 15, 1901.
On leaves of *Verbena urticifolia* L., June 15, 1901.
9. *Æcidium xanthoxyli* Peck.
On blades and petioles of leaves of *Xanthoxylum americanum* Mill.
10. *Coleosporium ipomœæ* Schw.
On leaves of *Ipomœa pandurata* (L.) Meyer, August 11, 1902. This is the first record of the collection of this rust in the state.
11. *Coleosporium solidaginis* (Schw.) Thum.
On leaves of *Solidago* sp., Aug. 8, 1902.
12. *Coleosporium vernoniæ* B. C.
On leaves of *Vernonia baldwinii* Torr., Aug. 18, 1900; July 31, 1902.

13. *Gymnosporangium clavariæforme* Jacq. I.
14. *Gymnosporangium macropus* Lk. III.
On *Juniperus virginiana* L., Apr. 11, 1902.
15. *Melampsora farinosa* (Pers.) Schroet.
On leaves of *Salix fluviatilis* Nutt., Nov. 10, 1901; Aug., 1902.
On leaves of *Cratægus* sp., Aug. 11, 1902.
16. *Puccinia bartholomæi* Diet. II.
On leaves of *Bouteloua curtipendula* Michx. (*B. racemosa* Lag.) Aug. 6, 1902.
17. *Puccinia caricis-asteris* Arth., I. (*Æcidium asterum* Schw.)
On leaves of *Aster multiflorus* Ait., May 29, 1902. See "Cultures of Uredineæ in 1900 and 1901," by J. C. Arthur, in *Journal of Mycology*, vol. 8, June, 1902.
18. *Puccinia caricis-erigerontis* Arth. I, III.
On leaves and stems of *Erigeron ramosus* Walt., June 15, 1901. I.
On leaves and stems of *E. philadelphicus* L., June 15, 1901. I.
On leaves and stems of *E. annuus* (L.) Pers., I, May 26, 1902.
On leaves and stems of *Carex* sp., III, Nov. 10, 1901.
Recent inoculation experiments made by Professor Arthur show that the æcidial stage of this rust is *Æcidium erigeronatum* Schw. (*Jour. Myc.*, 8:53.)
19. *Puccinia convolvuli* (Pers.) Cast. II.
On leaves of *Convolvulus sepium* L., July 9, 1902. Quite destructive to its host.
20. *Puccinia cyperi* Arth. II.
On leaves of *Cyperus strigosus* L., July 31, 1900.
21. *Puccinia helianthi* Schw. I, II, III.
On leaves of *Helianthus annuus* L., I (*Æcidium compositarum helianthi* Burrill); and II, May 25, 1902.
On leaves of *H. orgyalis* D. C., I, II, III, July 7, 1902; and III, August 6, 1902.
On leaves of *H. doronicoides* Lam., II and III, October 26, 1901.
22. *Puccinia heterospora* B. & C. III.
On leaves of *Abutilon abutilon* (L.) Rusby (*A. avicennæ* Gært.), July 31, 1900.
23. *Puccinia hieracii* (Schum.) Mart. II.
On leaves of *Taraxacum taraxacum* (L.) Karst. (*T. officinale* Weber), June 27, 1902.
24. *Puccinia nigrescens* Peck. I, II, III.
On leaves and stems of *Salvia pitcheri* Torr. (*S. azurea grandiflora* Benth.) I and II, May 28, 1902; III, August 6, 1902.
The æcidial stage of this species has not been previously reported in America. *Æcidia* amphigenous, few, in irregular clusters; peridia low; æcidiospores elliptical, pale yellow, 28-24 x 16 mm. in diameter; wall thin, smooth.
25. *Puccinia poarum* Niessl. II. (*Puccinia graminis* Pers.)
On leaves of *Poa pratensis* L., July 10, 1902.

26. *Puccinia podophylli* Schw. I, III.
 On leaves and stems of *Podophyllum peltatum* L., I and III, May 10, 1902; and III, May 27, 1902.
 While collecting the æcidia on May 10, some of the plants of *Podophyllum* were pulled up, and it was observed that quite a few of them were infested with the sori of the teleutospores of the rust. In each case the sorus was between the rhizome and the surface of the ground. Underground sori were again found on the 27th.
27. *Puccinia polygoni-amphibii* Pers. II.
 On leaves of *Polygonum convolvulus* L., August 11, 1902.
28. *Puccinia rubigo-vera* (D. C.) Wint. II, III.
 On leaves of *Hordeum jubatum* L., May 29, 1902. II.
 On leaves of *Triticum vulgare* II, May 28, 1902; on culms and leaves, III, August, 1902.
29. *Puccinia silphii* Schw. III.
 On stem and leaves of *Silphium integrifolium* Michx., June 21, 1902.
30. *Puccinia sorghi* Schw. II.
 On leaves of *Zea mays*, July, 1902.
31. *Puccinia vernoniæ* Schw. II, III.
 On leaves of *Vernonia baldwinii* Torr. August 6, 1902.
32. *Puccinia violæ* (Schum.) D. C. I, II, III.
 On leaves of *Viola pubescens* Ait., I, May 3, 1902; II, III, May 27, 1902.
 On leaves of *Viola cucullata* Ait., II, III, May 29, 1902.
33. *Puccinia windsoriæ* (Schw.) I (*Æcidium pteliæ* B. & C.)
 On leaves and rarely on fruits of *Ptelia trifoliata* L., June 15, 1901; June 21, 1902.
 This rust is found especially abundant on the leaves of the very young shrubs, and is usually present wherever its host is.
34. *Puccinia xanthii* (Schw.) III.
 On leaves of *Ambrosia trifida* L., July 15, 1902.
 On leaves of *Xanthium canadense* Mill., July 31, 1902.
35. *Pucciniastrum crotonis* (Cke.) De Toni. I, II, III.
 On leaves of *Croton monanthogynus* Michx., I, Aug. 18, 1900; II, III, Oct. 26, 1900.
 On leaves of *Croton capitatus* Michx., I, Aug. 18, 1900; III, Oct. 26, 1900.
36. *Uredo gaurina* Peck.
 On leaves and stems of *Gaura biennis* L., Aug. 6, 1902.
37. *Uredo nitens* (Schw.) De Toni.
 On leaves of *Rubus* sp., May 3, 1902.
38. *Uromyces astragali* (Opiz.) Sacc. II.
 On leaves of *Astragalus carolinianus* L. (*A. Canadensis* L.), Aug. 13, 1902. Sori very inconspicuous.
39. *Uromyces caladii* (Schw.) Farl. I, II, III.
 On leaves of *Arisæma dracontium* (L.) Schott, I (*Æcidium caladii* Schw.), and II, May 5, 1902; and III, May 27, 1902.
 On leaves of *Arisæma triphyllum* (L.) Torr., I, May 30, 1902; and III, May, 1901.

40. *Uromyces euphorbiæ* C. & P. I, II, III.
On young leaves of *Euphorbia dentata* Michx., I, May 25, 1902; II, May 25 (on same plant with the aecidia), and Aug. 11, 1902.
On leaves of *Euphorbia* sp., III, Aug. 11, 1902. See "Cultures of Uredineæ in 1900 and 1901," by J. C. Arthur, in *Journal of Mycology*, vol. 8, June, 1902.
41. *Uromyces graminicola* Burrill. III.
On blades and culms of *Panicum virgatum* L., Nov. 10, 1901.
42. *Uromyces hedysari-paniculata* (Schw.) Farl. II, III.
On leaves of *Meibomia sessilifolia* (Torr.) Kuntze (*Desmodium sessilifolium* T. & G.), July 31, 1900.
43. *Uromyces howei* Peck. III.
On leaves of *Asclepiodora viridis* (Walt.) A. Gray, Aug. 6, 1902.
44. *Uromyces hyperici* Schw. I.
On leaves of *Hypericum ellipticum* Hook., June 15, 1901.
45. *Uromyces spermacosis* (Schw.) Curt. III.
On leaves of *Diodia teres* Walt., Jan. 2, 1902.